Add a2

CLAIMS

1. A method of releasing an agent under predetermined conditions comprising the steps of protecting the agent within a lipid structure, causing lipase activity to be constituted in response to the predetermined conditions, and exposing the lipid structure to the constituted lipase activity such as to release the agent.

2. A method as claimed in claim 1 wherein the lipase activity is constituted by combining two or more components whereby the lipase activity of the product formed by the components is greater than the sum of the individual components.

3. A method as claimed in claim 1 or claim 2 wherein at least one of the lipase components is conjugated to a targeting molecule capable of specific binding to a predetermined target.

4. A method as claimed in any one of claims 1 to 3 wherein the achievement of conditions is detected by a specific antigen-antibody binding event or the annealing of a nucleotide probe to a specific nucleotide sequence.

5. A method for releasing an agent at a target site in a system comprising a method as claimed in any one of claims 1 to 4 wherein at least one lipase component is conjugated to a targeting molecule and is added to the system such that it binds to the target site, a second lipase component is added to the system and binds to the first such that lipase activity is constituted at the site, and lipid structures containing a suitable agent are added to the system such that they are lysed on contacting the constituted lipase activity thereby releasing the agent locally at the site.

6. A method as claimed in claim 5 wherein unbound targeting molecule-component conjugate is cleared from the system prior to adding the second component.

7. A method as claimed in claim 5 or claim 6 wherein the targeting molecule is an antibody.

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8. A method as claimed in any one of claims 5 to 7 wherein the target site is a tumour, a diseased cell or a pathogenic organism.

9. A method as claimed in any one of claims 5 to 8 wherein the agent comprises one or more of the following: a reporter molecule, a chemotherapeutic cytotoxic drug, a lymphokine, an anti-inflammatory, an anti-fungal agent, an anti-malarial agent, a synthetic oligonucleotide, or a plasmid.

10. A method of delivering a chemotherapeutic in vivo comprising a method as claimed in any one of claims 5 to 9 wherein the agent is a chemotherapeutic.

11. A method of delivering an anti-inflammatory drug in vivo comprising a method as claimed in any one of claims 5 to 9 wherein the agent is an anti-inflammatory drug.

12. A method for modifying the genetic nature of cells in vivo comprising a method as claimed in any one of claims 5 to 9 wherein the agent is a synthetic oligonucleotide or a plasmid.

13. A method for detecting the presence or location of a specific nucleotide sequence in a system comprising a method as claimed in any one of claims 2 to 4 wherein a probe which is complementary to the sequence is attached to at least one of the lipase components and the lipase components are added to the system such that in the presence of the sequence the probe or probes anneal to the sequence thereby causing lipase activity to be constituted at that site, the constituted lipase activity being detectable by the addition and lysing of an agent-containing lipid structure.

14. A method as claimed in claim 13 wherein the nucleotide sequence is attached to a solid phase either directly or indirectly.

15. A method for detecting the presence of an antigen in a system, comprising a method as claimed in any one of claims 2 to claim 4 wherein the antigen is conjugated to at least one of the lipase components and the conjugate is mixed with antibody raised against antigen such that it binds therewith and the lipase components are added to the system such that in the presence of

the authentic antigen the antibody is sequestered by the authentic antigen such that lipase activity is constituted, the constituted lipase activity being detectable by the addition and lysing of an agent-containing lipid structure.

16. A method as claimed in claim 15 wherein the antigen is attached to a solid phase either directly or indirectly.

17. A method as claimed in any one of claims 1 to 16 wherein the lipid structure comprises a phospholipid membrane defining a core.

18. A method as claimed in claim 17 wherein the lipid structure is a liposome.

19. A method as claimed in any one of claims 1 to 18 wherein the lipase activity comprises phospholipase C activity.

20. A method as claimed in claim 19 wherein the lipase activity comprises CPAT as hereinbefore described.

21. A method as claimed in any one of claims 2 to 20 wherein the components correspond to, or are derived from, an active lipase holoenzyme.

22. A method as claimed in claim 21 wherein the components are N-terminal recombinant CPAT and C-terminal recombinant CPAT as hereinbefore described.

23. A lipase component for use in a method as claimed in any one of claims 2 to 22 capable of combining with a second lipase component such that the lipase activity of the product formed by the components is greater than the sum of the individual components, said first lipase component being conjugated to a targeting molecule capable of specific binding to a predetermined target.

24. A lipase component as claimed in claim 23 being N-terminal recombinant CPAT or C-terminal recombinant CPAT as hereinbefore described

25. A kit for use in a method as claimed in any one of claims 2 to 23 comprising a lipase component as claimed in claim 23 or claim 24, and further comprising the second lipase component.

26. A kit as claimed in claim 25 further comprising lipid structures containing agent.

27. An in vivo anti-cancer method substantially as described hereinbefore with reference to Figure 3 and Example 3.

28. An in vitro antibody-mediated antigen detection assay substantially as described hereinbefore with reference to Figure 4 and Example 5 or Figure 6.

29. An in vitro nucleic acid hybridisation assay substantially as described hereinbefore with reference to Figure 5 and Example 6 or Figure 7.

30. A lipase component as claimed in claim 23 or claim 24 for use in a method of medical treatment or diagnosis.

31. A lipase component as claimed in claim 31 for use in the treatment or diagnosis of cancer.